

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF AGRICULTURAL ECONOMICS
DIVISION OF AGRICULTURAL STATISTICS
WASHINGTON, D. C.

C.E.M. # 1127

June 19, 1944

TITLE: Hybrid Corn

SUBJECT: County Estimates of Hybrid Corn Acreage as a Percentage of Total
Planted Acreage

1. GENERAL: Funds for continuing the special county estimates series for allotment crops, heretofore provided by transfer from A.A.A. and F.C.I.C. for the most part, were provided in our regular budget beginning with this fiscal year. Under this provision, one item is county estimates of percentage of all corn acreage planted with hybrid seed. The A.A.A. and F.C.I.C. use these county estimates in establishing factors for correcting normal yields for the influence of hybrid seed. This Division also has a definite interest in county data as well as data for districts and States.

The two agencies have again requested a continuation of the series of hybrid corn estimates for each county where the use of hybrid seed is a factor in corn yields. The F.C.I.C. made this request last year, but because of subsequent developments it was not complied with. This series thus would include all years through 1944 in which as much as 1 percent of the total corn acreage in any county was planted with hybrid seed, with particular emphasis now on the years 1941 through 1944 (1942 through 1944 in the 10 States of the North Central A.A.A. Region).

2. BASIC DATA AVAILABLE ON HYBRID CORN ACREAGE: The amount and scope of available basic information on corn acreage planted with hybrid seed varies considerably by States, but is summarized in columns 1, 2 and 3 of the attached table. The table is intended to expedite the assembling of data the Statistician may desire to use in preparing the estimates requested in this C.E.M. The period covered by the latest county estimates available and furnished to A.A.A. is as shown in the same table (Col. 4). Statisticians will recall the opinion surveys made through A.A.A. county committees covering all years up through the 1941 crop (C.E.M. #904). The North Central Region of A.A.A., in addition, has made census type surveys obtaining acreage and production of hybrid and open-pollinated corn separately for the 1939, 1940 and 1941 crops. Their 1943 farm plans (NCR-703) obtained information for the 1942 crop, but the data are not entirely comparable with those of previous years. These enumerated data have been used by the Board in setting the level of percentage estimates for counties, districts and States in this region as well as in States where such data were not available; also in evaluating the June aids sample data. This type of enumerated A.A.A. data will not be obtained for 1943 and 1944 crops. Other fragmentary data are available such as sales of hybrid seed gathered by some Statisticians and some early F.C.I.C. data in a few counties of 5 States in the Corn Belt.

In order to bring this type of information up to date the A.A.A., at the request of the F.C.I.C. and this Division, is making another opinion survey through county committees, covering the years 1941 to 1944 (for certain States 1942 to 1944), as indicated in the table attached (col.6). Several of the Regional A.A.A. offices have already mailed instructions, sample forms, etc. to their State A.A.A. offices for making the survey. Copies of the above material will be forwarded to our Statisticians as it becomes available. See Section 4 for details of this survey.

ORDA
LIB

NOV 8 1944

3. PRESENT SCOPE OF HYBRID CORN ACREAGE ESTIMATES: County percentages of total corn acreage planted to hybrid seed have been prepared for the years indicated in column 4 of the attached table. The complete record for all States, of the State percentages of total corn planted with hybrid seed, is included in the July 10, 1943 report entitled, "HYBRIDS DOMINATE CORN ACREAGE."

Enclosed is a form showing the Board record of district and State percentages for each State for which estimates have been prepared, from the earliest year through 1942. Also for the 10 Corn Belt States, photostatic copies of 1941 and 1942 county estimates submitted and adopted by the Board in response to section 5, paragraph 2 of Instructions #798 are enclosed. These records, together with the early series of county figures which were submitted to States concerned in late 1942, should complete the record for each State and provide a starting point for preparing the estimates requested in this C.E.M. After the July 11, 1944 report on hybrid corn acreage (See Inst. #900, paragraph 7,) has been released district and State Board percentages for 1943 and 1944 will be returned to each State for use in preparing county percentages for the two years.

4. DETAILS OF THE CURRENT A.A.A. SURVEY: County A.A.A. committees in each county will be asked to give their opinion of the percentage of all corn which was planted with hybrid seed, for the years shown in column 6 of the attached table. State A.A.A. committees furnish the instructions and forms to each County Committee. Two completed forms for each county will be mailed to the State A.A.A. office, one copy of which is to be in the B.A.E. Statistician's hands by August 1, 1944. If the county forms are not received by this date the Statistician should contact the State A.A.A. office. Obviously there will be only one report for a county. The data should be summarized as outlined in the next paragraph.

5. DATA TO BE SUBMITTED: For each of the years indicated in column 6 of the attached table, the following are to be submitted:

A. A tabulation and summary on State form C.E. 1-5 of the A.A.A. county percentages for the years reported in their 1944 survey. In adjacent columns also show any overlapping A.A.A. data, such as opinion percentages obtained in 1941 or enumerations made in States of the A.A.A. North Central Region. In another column show district percentages for the June aids data, with county percentages where the Statistician feels that the number of reports by counties is sufficient to give some stability to the county averages.

B. A Statistician's recommended percentage for each county, having 1 percent or more hybrids. This should be entered on the tabulation sheet. A column should be provided for Board adopted percentages.

C. Comments in duplicate, covering any point which would be helpful to the Board in reviewing the recommendations. A suggested summary sheet heading to be used in submitting county, district and State estimates for a given year is shown below with hypothetical data:

NEBRASKA : PERCENTAGE OF TOTAL CORN ACREAGE PLANTED WITH HYBRID SEED								
1942								
District and county	Weights	AAA	Sources					
	Source:	Enum.	Opinion	June	Other	Statist.		Board
	Statist. est.	data	reported	aids	Source:	Rec.		percent
	of pl. acres:		in	data		percent		
	1942		1942	1944				
Dist. 1	(000 acres)	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.
Jones	17	11.2	14	13	17		11	
Smith	50	28.5	35	31	39		29	
Doe	19	19.6	25	22	27		20	
King	27	21.3	29	25	32		21	
Str.	113	24.5			35			
District Wtd.			29	25			23	
State Str.	1,800	38.4			48			
State Wtd.			44	41	49		37	

The columns shown probably represent the maximum requirement. The actual number of columns to be used depends upon the data available in each State as shown in the table mentioned earlier. It will be noted that percentage estimates only are required by counties, districts and for the State.

June aids district and State percentages will be taken from the district summary for each year. All other district percentages will be listed and weighted as shown in the example above. Current county estimates of all corn planted should be used as weights. If these are not available other approximations of county and district acreage weights based on Census acreage data, or data prepared in Maximum Production studies, should be used. These county and district weights should add to the planted acreage of all corn as published by the Board for the respective years.

In the course of preparing the county, district and State percentages requested, Statisticians should review the estimated percentages for previous years and recommend revisions where they appear necessary. However, it is not expected that many changes will be made in the present county, district and State percentage estimates for the years prior to 1941 or 1942, as the case may be.

For the North Central States the current district estimates based upon chart interpretations of the June aids data have required little revision when the more nearly complete AAA enumeration data became available. It seems desirable, therefore, to keep changes to a minimum in the State percentage estimates which have already been published, and in the district estimates as adopted in the make-up of State estimates to be published July 11, 1944, and in those for earlier years of the present series for which county estimates are to be prepared now. Such changes in State or district percentages should be made only if strongly supported by new information, or when marked changes are indicated after weighting county percentages by planted acreage, or by other reasons fully substantiated in the Statistician's comments.

6. PROCEDURE: It seems inadvisable to require that the same procedure be followed in each State in preparing these percentage estimates. The Statistician's intimate knowledge of his State and of the basic data for his State should be an invaluable aid in establishing final figures and in smoothing out discrepancies in adjoining counties. The Board uses two types of charts in connection with hybrid corn estimates;

a. June aids IFA % versus Board % - by DISTRICTS.

b. Time series chart showing annual trend of the percentage of corn planted with hybrid seed since the estimates were started - by DISTRICTS.

State charts similar to a and b are also used. A.A.A. enumeration data, seed sales where available, etc., are also entered on these district and State charts. If not already available, the Statistician should prepare similar charts for his State, using the enclosed Board district percentage estimates with sample and other data in his office. As mentioned previously, A.A.A. enumeration data for the years 1939-1942 in 10 Corn Belt States were used to set the general level of Board estimates for those States and, in some instances, other States. The A.A.A. county opinion estimates gathered in 1941 (for a period of years) in many instances were not satisfactory and were discounted as explained in correspondence to the Statistician in 1942. The current A.A.A. opinion survey data may also need to be used with caution, but is expected to be of considerable help in estimating percentages for counties where sample and other basic data are very weak or entirely lacking.

A photostat of a chart is enclosed on which June aids data, by districts, were plotted versus the Board adopted district percentages for the years 1939 through 1942 for 10 Corn Belt States. Neither the years, States, nor districts are identified, as was the case when 1939 A.A.A. enumeration data were plotted versus June aids data by districts (See chart enclosed with Special #412, and #445 for some States). The chart shows the behavior of the June aids data for the group of States as a whole. Since the A.A.A. enumeration data were used to establish the Board level in these States it was not necessary to show A.A.A. data on the chart. The chart may prove especially useful in establishing county and district estimates for 1942 through 1944 in the 10 States concerned. It is also expected to prove useful in evaluating June aids data in other States for 1941 through 1944 and in reviewing the entire series of county, district and State estimates percentages for all States. Each Statistician may wish to prepare a similar chart using data for his own State.

The chart of hybrid percentage (June aids vs. A.A.A. enumeration or Board percentage) is based upon district data and the amount of bias is accentuated by that fact. It would seem that the tendency for farmers to shift from open-pollinated varieties to corn hybrids would be manifest first in the areas of heaviest corn acreage. In other words, it would be expected that the movement would start in the center or centers of corn production and spread out in a concentric pattern. It is also to be anticipated that our crop reporters would be among those in the lead in shifting to hybrids. As a result, the June aids percentages would tend to be biased upward in all parts of most districts and this bias would be largest in those counties of the district which are on the rim of the movement. This is another way of saying that the movement toward the use of hybrid seed would be more homogeneous by counties than by districts. The chances are also that the county biases may be on a different level than that read from district charts covering a series of years. If the June Aids data by counties are felt to be sufficiently reliable, this could be tested experimentally by reading the June aids data for the counties of a district on the district chart then computing the hybrid acreages and comparing their sum with the district acreage as computed direct

from the district percentage estimate. If understatement or overstatement was found in the years for which June data are available, it would point the way to adjusting the county percentages in other years. This adjustment within a specified district determined from the district bias curve might be expected to be upward in the counties having reported percentages falling in the higher ranges (say 75 percent and over), with some compensating downward adjustment in the counties in the lower ranges, but with the over-all net adjustment probably slightly upward.

All available information for each State should be used in bringing the county hybrid corn estimates (percentages) up to date. Statisticians may wish to review Specials #395, 412 and 445; also C.E.M. #904, and Instructions #798 and 900.

7. DATE DUE: In view of the time that will be required to assemble the basic data and establish or revise county estimates for the years requested, October 11, 1944 has been set as the date when the county percentage estimates are due in Washington. If any question arises in the course of the work on these estimates, or if any Statistician feels he cannot meet the due date he should communicate with the Washington office. Photostat copies of final Board percentages will be returned to each State. Time and cost of this work should be shown on the Monthly Performance Record in one of the blank columns to be headed "County hybrid corn estimates."

Paul L. Koonig

Paul L. Koonig
Head of Division

Enclosures: 1 Table of Data available, etc.
1 Form, Board District and State percentages.
1 Photostat chart.
1 Photostat of county data for 10 Corn Belt States.

Percentage of All Corn Planted With Hybrid Seed:- Data Available,
Estimates Prepared and to be Prepared

C.E.M. #1127

State	Type of data available Enumeration: data years	Year hybrid Opinion: question put on June years: general schedule	Years for which county estimates have been pre- pared and sub- mitted to Wash.	Year hybrid estimates on State basis began	Estimates to be sub- mitted by Oct. 11, 194 years
	1	2	3	4	5
Me.	---	---	1941	---	1941
N.H.	---	---	1941	---	1939
Vt.	---	---	1941	---	1938
Mass.	---	---	1941	---	1938
R.I.	---	---	1941	---	1938
Conn.	---	---	1941	---	1936
N.Y.	---	1936-41	1940	1936-41	1936
N.J.	---	1936-41	1940	1936-41	1936
Pa.	---	1936-41	1940	1936-41	1936
Ohio	1939-42	1933-41	1938	1935-42	1935
Ind.	1939-42	1933-41	1938	1934-42	1934
Ill.	1939-42	1933-41	1938	1933-42	1933
Mich.	1939-42	1936-41	1938	1935-42	1935
Wis.	1939-42	1933-41	1938	1933-42	1933
Minn.	1939-42	1933-41	1938	1933-42	1933
Iowa	1939-42	1933-41	1938	1933-42	1933
Mo.	1939-42	1936-41	1939	1936-42	1936
N. Dak.	---	1938-41	1940	1938-41	1938
S. Dak.	1939-42	1936-41	1938	1935-42	1935
Nebr.	1939-42	1933-41	1938	1933-42	1933*
Kans.	---	1936-41	1938	1937-41	1937
Del.	---	1936-41	1940	1937-41	1937
Md.	---	1936-41	1940	1936-41	1936*
Va.	---	1936-41	1940	1936-41	1936*
W.Va.	---	1936-41	1940	1936-41	1936
N.C.	---	1936-41	1941	1938-41	1938
S.C.	---	1938-41	1941	---	1941
Ga.	---	1938-41	1941	---	1941
Fla.	---	1938-41	1941	---	1941
Ky.	---	1936-41	1940	1936-41	1936
Tenn.	---	1936-41	1940	1936-41	1936*
Ala.	---	1938-41	1941	1938-41	1938*
Miss.	---	1938-41	1941	1938-41	1938
Ark.	---	1938-41	1941	1938-41	1938
La.	---	1938-41	1941	1938-41	1938
Okla.	---	1938-41	1941	1938-41	1938
Tex.	---	1938-41	1941	1938-41	1941
Mont.	---	---	1941	---	1940
Idaho	---	1938-41	1941	1938-41	1938
Wyo.	---	---	1941	---	1939
Colo.	---	1938-41	1940	1937-42	1937*
N.Mex.	---	---	1941	---	1939
Ariz.	---	---	---	---	1942
Utah	---	---	1941	---	1938
Nev.	---	---	1941	---	1940
Wash.	---	1938-41	1942	1938-41	1938
Oreg.	---	1938-41	1942	1938-41	1938
Calif.	---	---	---	---	1942

* Less than one-tenth of one percent.

1/ Coverage not complete for all counties in all States - See C.E.M. #904.

